

## EXHIBIT 22

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

IN RE NATIONAL	:	MDL No. 2804
PRESCRIPTION OPIATE	:	CASE NO. 17-MD-2804
LITIGATION	:	(DAP)
	:	

EXPERT REPORT OF CRAIG J. MCCANN, PH.D., CFA  
March 25, 2019

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## **B. MME Conversion Factor**

117. Because each drug can be prescribed in more than one dosage strength (e.g., 5 mg or 10 mg), compiling only the number of pills shipped provides a partial picture of the amount of drugs shipped. Also, since different drugs can have different potencies, compiling only the total weight of active ingredient shipped also provides a partial picture of the amount of drugs shipped.

118. The CDC has published “MME conversion factors” that allow opioids to be directly comparable to one another by converting different drugs and dosage strengths into morphine milligram equivalents.<sup>49</sup> I added the MME conversion factor to the ARCOS Data, matching the NDC in the CDC table to the NDC in the ARCOS Data.

## **C. Additional Pharmacy Information**

119. I supplemented the Buyer Business Activity field with data from the Centers for Medicare and Medicaid Services, which assigns National Provider Identifiers (“NPIs”) to most covered health care providers in the United States. In addition to assigning and tracking NPIs, the Centers for Medicare and Medicaid Services provides a classification of Buyers’ Business Activities that is more detailed than the classification in the ARCOS Data,

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<sup>49</sup> National Center for Injury Prevention and Control. CDC compilation of benzodiazepines, muscle relaxants, stimulants, zolpidem, and opioid analgesics with oral morphine milligram equivalent conversion factors, 2018 version. Atlanta, GA: Centers for Disease Control and Prevention; 2018. Available at [www.cdc.gov/drugoverdose/resources/data.html](http://www.cdc.gov/drugoverdose/resources/data.html).

## State and County Opioid Total Dosage Units Market Share

Company Name	Market Share	OH	Market Share	Cuyahoga County
		Total Dosage Units		Total Dosage Units
Cardinal Health				
McKesson Corporation				
AmerisourceBergen Drug				
Walgreen Co				
CVS				
Wal-Mart				
Kroger				
Rite Aid				
Omnicare Distribution Center LLC				
Miami-Luken				
HBC Service Company				
Discount Drug Mart				
H. D. Smith				
Anda, Inc				
Prescription Supply Inc				
Eckerd Corporation				
Frank W Kerr Inc				
Value Drug Co				
Meijer Distribution Inc #90				
Quest Pharmaceuticals Inc				
KeySource Medical				
The Harvard Drug Group				
Rochester Drug Co-Operative Inc				
River City Pharma				
Top Rx, Inc.				
Capital Wholesale Drug & Co				
Auburn Pharmaceutical				
Advantage Logistics				
Heartland Repack Services				
Associated Pharmacies Inc				
Henry Schein Inc				
Safecor Health, LLC				
Genetco Inc				
Qualitest Pharmaceuticals				
Amneal Pharmaceuticals LLC				
Dispensing Solutions				
Expert-Med				
Smith Drug Company				
Pharmacy Service Ctr Distr				
DRx Pharmaceutical Consultants, Inc.				
American Sales Company				
Pharmacy Buying Association				
Morris & Dickson Co				
Richie Pharmacal				
Physicians Pharmaceutical Corp				
D & K Healthcare Resources				
Actavis Pharma, Inc.				
Prescript Pharmaceuticals				
MWI Veterinary Supply				
General Injectables & Vaccines, Inc				

Opioid Total MME by Company in Cuyahoga County, OH

County Population	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total MME	1,312,816	1,301,540	1,291,479	1,285,082	1,278,200	1,270,461	1,266,210	1,264,622	1,262,459
Market Share									

Company Name

Cardinal Health  
 AmerisourceBergen Drug  
 Walgreen Co  
 McKesson Corporation  
 CVS  
 Wal-Mart  
 H. D. Smith  
 Prescription Supply Inc  
 Anda, Inc  
 Discount Drug Mart  
 Rite Aid  
 HBC Service Company  
 Eckerd Corporation  
 KeySource Medical  
 West-Ward Pharmaceutical Corp.  
 Fagron Inc  
 Hospira Worldwide LLC  
 The Harvard Drug Group  
 River City Pharma  
 Henry Schein Inc  
 Akorn, Inc.  
 Smith Drug Company  
 Amneal Pharmaceuticals LLC  
 Safacor Health, LLC  
 PSS World Medical Inc  
 MWI Veterinary Supply  
 American Sales Company  
 Fisher Clinical Services Inc  
 Baxter Healthcare Corp  
 Value Drug Co  
 Miami-Luken  
 Dispensing Solutions  
 Priority Healthcare  
 Quest Pharmaceuticals Inc  
 ACE Surgical Supply Co Inc  
 Patterson Logistics Services  
 Professional Vet Products  
 Pharmacy Service Ctr Distr  
 Almac Clinical Services, Inc.  
 Darby Dental Supply, LLC

## State and County Opioid Total Dosage Units Market Share

Company Name	OH		Summit County	
	Market Share	Total Dosage Units	Market Share	Total Dosage Units
Cardinal Health				
McKesson Corporation				
AmerisourceBergen Drug				
Walgreen Co				
CVS				
Wal-Mart				
Kroger				
Rite Aid				
Omnicare Distribution Center LLC				
Miami-Luken				
HBC Service Company				
Discount Drug Mart				
H. D. Smith				
Anda, Inc				
Prescription Supply Inc				
Eckerd Corporation				
Frank W Kerr Inc				
Value Drug Co				
Meijer Distribution Inc #90				
Quest Pharmaceuticals Inc				
KeySource Medical				
The Harvard Drug Group				
Rochester Drug Co-Operative Inc				
River City Pharma				
Top Rx, Inc.				
Capital Wholesale Drug & Co				
Auburn Pharmaceutical				
Advantage Logistics				
Heartland Repack Services				
Associated Pharmacies Inc				
Henry Schein Inc				
Safecor Health, LLC				
Genetco Inc				
Qualitest Pharmaceuticals				
Amneal Pharmaceuticals LLC				
Dispensing Solutions				
Expert-Med				
Smith Drug Company				
Pharmacy Service Ctr Distr				
DRx Pharmaceutical Consultants, Inc.				
American Sales Company				
Pharmacy Buying Association				
Morris & Dickson Co				
Richie Pharmacal				
Physicians Pharmaceutical Corp				
D & K Healthcare Resources				
Actavis Pharma, Inc.				
Prescript Pharmaceuticals				
MWI Veterinary Supply				
General Injectables & Vaccines, Inc				

Opioid Total MME by Company in Summit County, OH

Company Name	County Population Total MME	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cardinal Health		544,660	544,275	543,116	542,135	541,648	541,293	540,716	541,601	542,095
AmerisourceBergen Drug										
McKesson Corporation										
Walgreen Co										
CVS										
Anda, Inc										
Miami-Luken										
Wal-Mart										
HBC Service Company										
Rite Aid										
Discount Drug Mart										
Eckerd Corporation										
KeySource Medical										
Amatheon Inc										
Auburn Pharmaceutical										
PSS World Medical Inc										
Henry Schein Inc										
Almac Clinical Services, Inc.										
The Harvard Drug Group										
H. D. Smith										
River City Pharma										
MWI Veterinary Supply										
Southern Anesthesia & Surgical, Inc.										
Priority Healthcare										
American Sales Company										
Butler Animal Health Supply										
Rochester Drug Co-Operative Inc										
Prescription Supply Inc										
PD-Rx Pharmaceuticals Inc										
Fisher Clinical Services Inc										
Patterson Logistics Services										
Expert-Med										
JOM Pharmaceutical Services, Inc.										
Midwest Veterinary Supply Inc										
Associated Pharmacies Inc										
Pharmacy Service Ctr Distr										
Independent Pharmacy Cooperative										
Fagron Inc										
Watson Pharma Inc										
Medisca Inc.										
DRx Pharmaceutical Consultants, Inc.										
Smith Medical Partners LLC										
Darby Dental Supply, LLC										

